(17.) *Illumination of the Field.*—The method of examination, which is due to Captain Abney, is described. The question of the falling off of the intensity of illumination from the centre of the plate is discussed.

II. "Supplementary Report on Explorations of Erect Trees containing Animal Remains in the Coal-Formation of Nova Scotia." By Sir J. WILLIAM DAWSON, F.R.S. Received April 25, 1892.

To the memoir which I had the honour to present to the Royal Society on this subject in 1882* I appended a note from Dr. Scudder, of Cambridge, U.S., so well known for his researches in fossil Insects and Arachnidans, in which he gave a preliminary account of the remains of Arthropods in my collections which I had submitted to him. He has only in the present year completed his examination of these remains, most of which are very fragmentary, and much damaged by unequal pressure. The result has been embodied in a Report on Canadian Fossil Insects, now in course of publication by the Geological Survey of Canada.

In this report he will describe from the contents of the Sigillarian stumps extracted by me, with the aid of the grant of this Society, three new species of Myriapoda, making, with the five previously known from these remarkable repositories, eight in all, belonging to two families, Archiulidæ and Euphoberidæ, and to three genera, *Archiulus*, *Xylobius*, and *Amynilyspes*. The three new species are *Archiulus euphoberioides*, Sc., *A. Lyelli*, Sc., and *Amynilyspes* (sp.). The remains of Scorpions he refers to three species, *Mazonia acadica*, Sc., *Mazonia* (sp.), and a third represented only by small fragments. The characters of the species referred to *Mazonia* he considers as tending to establish the generic distinctness of *Mazonia* from *Eoscorpius*. Dr. Scudder also notices the fragment of an insect's head containing part of a facetted eye, mentioned in my memoir, and considers it probably a portion of a Cockroach.

Much credit is due to Dr. Scudder for the care and skill with which he has worked up the mostly small and obscure fragments which I was able to submit to him, and which are probably little more than *débris* of the food of the Amphibians living for a time in these hollow stumps, and devouring such smaller animals as were so unfortunate as to be imprisoned with them. In this connexion the suggestion of Dr. Scudder is worthy of attention, that the scaly armour of the smaller Microsaurians may have been intended to defend them against the active and venomous Scorpions which were their contemporaries, and some of which were sufficiently large to

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* 'Phil. Trans.,' 1882, p. 621.

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be formidable antagonists to the smaller land Vertebrates of the period.

The report of Dr. Scudder will complete the account of the land animals of the erect Sigillariæ of the South Joggins, unless by new falls of the cliff fresh trees should be exposed. From 1851, when the first remains were obtained from these singular repositories by the late Sir Charles Lyell and the writer, up to the present time, they have afforded the remains of twelve species of Amphibians, three land Snails, eight Millipedes, three Scorpions, and an Insect.

The type specimens of these animals have been placed in the Peter Redpath Museum of McGill University, and such duplicates as are available will be sent to the British Museum and that of the Geological Survey of Canada.

III. "The Hippocampus." By Alex Hill, M.D., Master of Downing College. Communicated by Prof. A. Macalister, M.D., F.R.S. Received May 4, 1892.

(Abstract.)

The subject of this paper is the hippocampal region of the brain in anosmatic animals. Several specimens of the brain of the bottle-nosed whale, narwhal, porpoise, and calf-seal were obtained for the purpose of studying the extent to which the hippocampus in animals totally destitute of the sense of smell, or possessing it in a very small degree, departs from the ordinary type.

The hippocampal region was, in each case, cut into a series of sections, which showed that there is, in the brains of *Hyperoodon* and *Monodon*, no fascia dentata; in *Phocæna* this formation is very rudimentary; in *Phoca* it is rather less strongly developed than in man.

As a standard of comparison, the hippocampus of the ox was studied in a similar manner. Certain points which have not been described hitherto with regard to the anatomy and histology of the hippocampus in macrosmatic brains are noticed. Other peculiarities in the general form and in minute structure which distinguish the brains of anosmatic animals are also mentioned incidentally.

The discovery that the fascia dentata is completely absent in animals which possess no olfactory bulb or tract, and that it varies in development directly as the size of these organs, throws light upon the function of the hippocampal region, and seems to call for a fresh definition of its several parts and a revision of the nomenclature of the region. The paper contains an historical survey of the terminology and suggestions for its revision.